TECHNICAL SUPPORT DOCUMENT FOR CANCER POTENCY FACTORS

APPENDIX H

Exposure Routes and Study Types Used to Derive Cancer Unit Risks and Slope Factors

Chemical		Exposure Route	Study Type	Unit Risk (µg/m³) ⁻¹	Slope Factor (mg/kg-day) ⁻¹	Animal Unit Risk (µg/m³)-1	Animal Slope Factor (mg/kg-day) ⁻¹
Acetaldehyde		I	A	2.7 E-6	1.0 E-2	(μβ/ΙΙΙ)	(mg/kg day)
Acetamide		D	A	2.0 E-5	7.0 E-2		
Acrylamide		DW	A	1.3 E-3	4.5 E+0		
Acrylonitrile		I	Н	2.9 E-4	1.0 E+0	1.5 E-5 (I)	5.4 E-1 (I)
Allyl chloride		G	A	6.0 E-6	2.1 E-2		
2-Aminoanthraquinone		D	A	9.4 E-6	3.3 E-2		
Aniline		D	A	1.6 E-6	5.7 E-3		
Arsenic (inorganic)	(inhalation)	I	Н	3.3 E-3	1.2 E+1	NA	
	(oral)	DW	Н		1.5 E+0		NA
Asbestos		I	Н	6.3 E-2	2.2 E+2	NA	
				1.9 E-4 [#]			
Benz[a]anthraceneBaP	(inhalation)			1.1 E-4	3.9 E-1		
	(oral)				1.2 E+0		
Benzene		I	Н	2.9 E-5	1.0 E-1	5.2 E-5 (C)	
Benzidine		I	Н	1.4 E-1	5.0 E+2	NA	
Benzo[a]pyrene	(inhalation)	I	\mathbf{A}	1.1 E-3	3.9 E+0		
	(oral)	D	\mathbf{A}		1.2 E+1		
Benzo[b]fluoranthrene $^{\mathrm{BaP}}$	(inhalation)			1.1 E-4	3.9 E-1		
	(oral)				1.2 E+0		
Benzo[j]fluoranthrene ^{BaP}	(inhalation)			1.1 E-4	3.9 E-1		
	(oral)				1.2 E+0		
Benzo[k]fluoranthrene BaP	(inhalation)			1.1 E-4	3.9 E-1		
	(oral)				1.2 E+0		
Benzyl chloride		G	A	4.9 E-5	1.7 E-1		
Beryllium	(inhalation)	I	Н	2.4 E-3	8.4 E+0	NA	

Footnotes

BaP see benzo[a]pyrene TAC document; calculated from unit risk/cancer potency factors for BaP using PEF factors

Exposure Routes

D = diet; DW = drinking water; G = gavage; I = inhalation; O = other oral route

Study Type

A = animal: H = human

Document Source

bold type = TAC document

Animal Unit Risk, Slope Factors

 $^{[100 \} PCM \ fibers/m^3]^{-1}$; see Appendix D

can be calculated using PEF factors contained in the benzo[a]pyrene TAC document

see Appendix A Α

Listed by ARB as "Particulate Matter from Diesel-Fueled Engines"; Scientific Review Panel unit risk "reasonable estimate" = $3.0 \text{ E-4} \ (\mu g/m^3)^{-1}$. Range of unit risks in TAC document was $1.3 \text{ E-4} - 2.4 \text{ E-3} \ (\mu g/m^3)^{-1}$. See chemical summary for risk categorization

1,3-Butadiene	Chemical	Exposure Route	Study Type	Unit Risk	Slope Factor	Animal Unit	Animal Slope
Bis(2-chloroethyl) ether Bis(chloromethyl) ether Bis(chloromethyl) ether Bis(chloromethyl) ether Bis(chloromethyl) ether Bis(chloromethyl) ether I A 1.3 E-2 4.6 E+1 I.3-Butadien I A 1.7 E-4 6.0 E-1 Cadmium (and compounds) I H 4.2 E-3 1.5 E+1 Carbon tetrachloride G A 4.2 E-5 1.5 E-1 Chlorinated dibenzo-p-dioxin ^A G A 2,3,7,8-Tetrachlorodibenzo-p-dioxin 1,2,3,7,8-Pentachlorodibenzo-p-dioxin 1,2,3,7,8-Pentachlorodibenzo-p-dioxin 1,2,3,7,8-Hexachlorodibenzo-p-dioxin 1,2,3,7,8-Hexachlorodibenzo-p-dioxin 1,2,3,7,8-Pethachlorodibenzo-p-dioxin 1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin 1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin Chlorinated dibenzofuran 2,3,4,7,8-Pentachlorodibenzofuran 1,2,3,4,7,8-Pentachlorodibenzofuran 1,2,3,4,7,8-Pentachlorodibenzofuran 1,2,3,4,7,8-Hexachlorodibenzofuran 1,3,8,1,2,1,2,1,2,1,2,1,2				$(\mu g/m^3)^{-1}$	(mg/kg-day) ⁻¹		
Bis(chloromethyl)ether						$(\mu g/m^3)^{-1}$	(mg/kg-day) ⁻¹
1,3-Butadiene I A 1,7 E-4 6.0 E-1 Cadmium (and compounds) I H 4.2 E-3 1.5 E+1 1.8 E-1 Carbon tetrachloride G A 4.2 E-5 1.5 E-1 1.8 E-1 Chlorinated dibenzo-p-dioxins ^A G A 2.3,7,8-Tetrachlorodibenzo-p-dioxin 1.9 E+1 6.5 E+4 1.3 E+5 1,2,3,7,8-Pentachlorodibenzo-p-dioxin 3.8 E+0 1.3 E+4 1.3 E+4 1.3 E+4 1,2,3,4,5,7,8-Hexachlorodibenzo-p-dioxin 3.8 E+0 1.3 E+4 1.3 E+4 1.3 E+4 1,2,3,4,5,6,7,8-Oetachlorodibenzo-p-dioxin 3.8 E+0 1.3 E+4 1.3 E+4 1.3 E+4 1,2,3,4,5,6,7,8-Oetachlorodibenzo-p-dioxin 3.8 E+0 1.3 E+2 1.3 E+2 1.3 E+2 Chlorinated dibenzofurans ^A G A 3.8 E+0 1.3 E+4 1.2 E+4 1.2 E+4 1.3 E+4 1.3 E+4 1.3 E+4 1.2 E+4 1.3 E+4 1.3 E+4 1.2 E+4 1.3 E+4 1.2 E+4 1.3 E+4 1.2 E+4 1.2 E+4 1.3 E+4 1.2 E+4 1.	Bis(2-chloroethyl) ether	G/D	A	7.1 E-4	2.5 E+0		
Cadmium (and compounds) I H 4.2 E-3 1.5 E+1 1.8 E-1 Carbon tetrachloride G A 4.2 E-5 1.5 E-1 1.8 E-1 Chlorinated dibenzo-p-dioxins ^A G A 2,3,7,8-Tetrachlorodibenzo-p-dioxin 1.9 E+1 6.5 E+4 1,2,3,7,8-Pentachlorodibenzo-p-dioxin 1,9 E+1 6.5 E+4 1.3 E+4 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Hexachlorodibenzo-p-dioxin 3.8 E-0 1.3 E+4 1,2,3,4,6,7,8-Hexachlorodibenzo-p-dioxin 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin 3.8 E-0 1.3 E+4 1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin 3.8 E-0 1.3 E+4 1,2,3,4,5,6,7,8-Pentachlorodibenzofuran 1.9 E+0 6.5 E+3 2,3,4,7,8-Pentachlorodibenzofuran 1.9 E+1 6.5 E+4 1,2,3,4,7,8-Pentachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,7,8-Pentachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,7,8-Pentachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,7,8-Pentachlorodibenzofuran 3.8 E+0	Bis(chloromethyl)ether	I	A	1.3 E-2	4.6 E+1		
Carbon tetrachloride Chlorinated dibenzo-p-dioxins	1,3-Butadiene	I	A	1.7 E-4	6.0 E-1		
Chlorinated dibenzo-p-dioxins	Cadmium (and compounds)	I	H	4.2 E-3	1.5 E+1	1.8 E-1	
2,3,7,8-Tetrachlorodibenzo-p-dioxin 3.8 E+1 1.3 E+5 1,2,3,7,8-Pentachlorodibenzo-p-dioxin 1.9 E+1 6.5 E+4 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin 3.8 E+0 1.3 E+4 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin 3.8 E+0 1.3 E+4 1,2,3,7,8-Hexachlorodibenzo-p-dioxin 3.8 E+0 1.3 E+4 1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin 3.8 E+0 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin 3.8 E+0 1.3 E+2 Chlorinated dibenzofurans G A 2,3,7,8-Tetrachlorodibenzofuran 1.9 E+0 6.5 E+3 1,2,3,7,8-Pentachlorodibenzofuran 1.9 E+0 6.5 E+4 1,2,3,4,7,8-Pentachlorodibenzofuran 1.9 E+1 6.5 E+4 1,2,3,4,7,8-Pentachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,5,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E+0 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran	Carbon tetrachloride	\mathbf{G}	A	4.2 E-5	1.5 E-1		
1,2,3,7,8-Pentachlorodibenzo-p-dioxin 1,9 E+1 6,5 E+4 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin 3,8 E+0 1,3 E+4 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin 3,8 E+0 1,3 E+4 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin 3,8 E+0 1,3 E+4 1,2,3,4,5,6,7,8-Heptachlorodibenzo-p-dioxin 3,8 E-1 1,3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin 3,8 E-2 1,3 E+2 Chlorinated dibenzofuransA G A 2,3,7,8-Tetrachlorodibenzofuran 1,9 E+0 6,5 E+3 2,3,7,8-Pentachlorodibenzofuran 1,9 E+0 6,5 E+3 2,3,4,7,8-Pentachlorodibenzofuran 1,9 E+1 6,5 E+3 1,2,3,4,7,8-Hexachlorodibenzofuran 1,9 E+1 6,5 E+3 1,2,3,4,7,8-Hexachlorodibenzofuran 3,8 E+0 1,3 E+4 1,2,3,4,6,7,8-Hexachlorodibenzofuran 3,8 E+0 1,3 E+4 1,2,3,4,6,7,8-Hexachlorodibenzofuran 3,8 E+0 1,3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzofuran 3,8 E+0 1,3 E+4 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3,8 E+1 1,3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3,8 E+1 1,3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran </td <td>Chlorinated dibenzo-p-dioxins^A</td> <td>\mathbf{G}</td> <td>A</td> <td></td> <td></td> <td></td> <td></td>	Chlorinated dibenzo-p-dioxins ^A	\mathbf{G}	A				
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin 3.8 E+0 1.3 E+4 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin 3.8 E+0 1.3 E+4 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin 3.8 E+0 1.3 E+4 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin 3.8 E-1 1.3 E+3 1.3 E+2 1.3 E+2 1.3 E+2 1.3 E+2 1.3 E+4 1,2,3,7,8-Pentachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8-Pentachlorodibenzofuran 1.9 E+0 6.5 E+3 1.3 E+4 1,2,3,4,7,8-Hexachlorodibenzofuran 1.9 E+1 6.5 E+4 1.3 E+4 1,2,3,4,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8,9-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8,9-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-2 1.3 E+2 Chlorinated paraffins G	2,3,7,8-Tetrachlorodibenzo-p-dioxin			3.8 E+1	1.3 E+5		
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin 3.8 E+0 1.3 E+4 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin 3.8 E+1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin 3.8 E-2 1.3 E+2 Chlorinated dibenzofuransA G A 2,3,7,8-Tetrachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8-Pentachlorodibenzofuran 1.9 E+0 6.5 E+3 2,3,4,7,8-Pentachlorodibenzofuran 1.9 E+1 6.5 E+4 1,2,3,4,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,6,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8,9-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzofuran 3.8 E+1 1.3 E+4 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-2 1.3 E+2 Chlorinated paraffins G A 2.5 E-5 8.9 E-2 Chloroform G A 5.3 E-6 1.9 E-2	1,2,3,7,8-Pentachlorodibenzo-p-dioxin			1.9 E+1	6.5 E+4		
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin 3.8 E+0 1,3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin 3.8 E-1 1,3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin 3.8 E-2 1,3 E+2 Chlorinated dibenzofurans ^A G A 2,3,7,8-Tetrachlorodibenzofuran 1.9 E+0 6.5 E+3 1,2,3,7,8-Pentachlorodibenzofuran 1.9 E+1 6.5 E+4 1,2,3,4,7,8-Pentachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8,9-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,7,8,9-Heptachlorodibenzofuran 3.8 E+1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-1 1.3 E+2 Chlorinated paraffins G A 2.5 E-5 8.9 E-2 Chloroform G A 5.3 E-6 1.9 E-2	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin			3.8 E+0	1.3 E+4		
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin 3.8 E-2 1.3 E+2 Chlorinated dibenzofuransA G A 2,3,7,8-Tetrachlorodibenzofuran 1.9 E+0 6.5 E+3 2,3,4,7,8-Pentachlorodibenzofuran 1.9 E+1 6.5 E+4 1,2,3,4,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,6,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8,9-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 2,3,4,6,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-2 1.3 E+2 Chlorinated paraffins G A 2.5 E-5 8.9 E-2 Chloroform G A 5.3 E-6 1.9 E-2	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin			3.8 E+0	1.3 E+4		
1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin 3.8 E-2 1.3 E+2 Chlorinated dibenzofurans ^A G A 2,3,7,8-Tetrachlorodibenzofuran 1.9 E+0 6.5 E+3 1,2,3,7,8-Pentachlorodibenzofuran 1.9 E+1 6.5 E+4 2,3,4,7,8-Pentachlorodibenzofuran 1.9 E+1 6.5 E+4 1,2,3,4,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8,9-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 2,3,4,6,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-2 1.3 E+2 Chlorinated paraffins G A 2.5 E-5 8.9 E-2 Chloroform G A 5.3 E-6 1.9 E-2	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin			3.8 E+0	1.3 E+4		
Chlorinated dibenzofurans ^A G A 2,3,7,8-Tetrachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8-Pentachlorodibenzofuran 1.9 E+0 6.5 E+3 2,3,4,7,8-Pentachlorodibenzofuran 1.9 E+1 6.5 E+4 1,2,3,4,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8,9-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 2,3,4,6,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,7,8,9-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-2 1.3 E+2 Chlorinated paraffins G A 2.5 E-5 8.9 E-2 Chloroform G A 5.3 E-6 1.9 E-2	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin			3.8 E-1	1.3 E+3		
2,3,7,8-Tetrachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8-Pentachlorodibenzofuran 1.9 E+0 6.5 E+3 2,3,4,7,8-Pentachlorodibenzofuran 1.9 E+1 6.5 E+4 1,2,3,4,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8,9-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 2,3,4,6,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Hexachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,7,8,9-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-2 1.3 E+2 Chlorinated paraffins G A 2.5 E-5 8.9 E-2 Chloroform G A 5.3 E-6 1.9 E-2	1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin			3.8 E-2	1.3 E+2		
1,2,3,7,8-Pentachlorodibenzofuran 1,9 E+0 6.5 E+3 2,3,4,7,8-Pentachlorodibenzofuran 1,9 E+1 6.5 E+4 1,2,3,4,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8,9-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8,9-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Hexachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,7,8,9-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-2 1.3 E+2 Chlorinated paraffins G A 2.5 E-5 8.9 E-2 Chloroform G A 5.3 E-6 1.9 E-2	Chlorinated dibenzofurans ^A	G	A				
2,3,4,7,8-Pentachlorodibenzofuran 1.9 E+1 6.5 E+4 1,2,3,4,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,6,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8,9-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 2,3,4,6,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,7,8,9-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-2 1.3 E+2 Chlorinated paraffins G A 2.5 E-5 8.9 E-2 Chloroform G A 5.3 E-6 1.9 E-2	2,3,7,8-Tetrachlorodibenzofuran			3.8 E+0	1.3 E+4		
1,2,3,4,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,6,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8,9-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 2,3,4,6,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,7,8,9-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-2 1.3 E+2 Chlorinated paraffins G A 2.5 E-5 8.9 E-2 Chloroform G A 5.3 E-6 1.9 E-2	1,2,3,7,8-Pentachlorodibenzofuran			1.9 E+0	6.5 E+3		
1,2,3,6,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,7,8,9-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 2,3,4,6,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,7,8,9-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-2 1.3 E+2 Chlorinated paraffins G A 2.5 E-5 8.9 E-2 Chloroform G A 5.3 E-6 1.9 E-2	2,3,4,7,8-Pentachlorodibenzofuran			1.9 E+1	6.5 E+4		
1,2,3,7,8,9-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 2,3,4,6,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,7,8,9-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-2 1.3 E+2 Chlorinated paraffins G A 2.5 E-5 8.9 E-2 Chloroform G A 5.3 E-6 1.9 E-2	1,2,3,4,7,8-Hexachlorodibenzofuran			3.8 E+0	1.3 E+4		
2,3,4,6,7,8-Hexachlorodibenzofuran 3.8 E+0 1.3 E+4 1,2,3,4,6,7,8-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,7,8,9-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-2 1.3 E+2 Chlorinated paraffins G A 2.5 E-5 8.9 E-2 Chloroform G A 5.3 E-6 1.9 E-2	1,2,3,6,7,8-Hexachlorodibenzofuran			3.8 E+0	1.3 E+4		
1,2,3,4,6,7,8-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,7,8,9-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-2 1.3 E+2 Chlorinated paraffins G A 2.5 E-5 8.9 E-2 Chloroform G A 5.3 E-6 1.9 E-2	1,2,3,7,8,9-Hexachlorodibenzofuran			3.8 E+0	1.3 E+4		
1,2,3,4,7,8,9-Heptachlorodibenzofuran 3.8 E-1 1.3 E+3 1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-2 1.3 E+2 Chlorinated paraffins G A 2.5 E-5 8.9 E-2 Chloroform G A 5.3 E-6 1.9 E-2	2,3,4,6,7,8-Hexachlorodibenzofuran			3.8 E+0	1.3 E+4		
1,2,3,4,5,6,7,8-Octachlorodibenzofuran 3.8 E-2 1.3 E+2 Chlorinated paraffins G A 2.5 E-5 8.9 E-2 Chloroform G A 5.3 E-6 1.9 E-2	1,2,3,4,6,7,8-Heptachlorodibenzofuran			3.8 E-1	1.3 E+3		
Chlorinated paraffins G A 2.5 E-5 8.9 E-2 Chloroform G A 5.3 E-6 1.9 E-2	1,2,3,4,7,8,9-Heptachlorodibenzofuran			3.8 E-1	1.3 E+3		
Chloroform G A 5.3 E-6 1.9 E-2	1,2,3,4,5,6,7,8-Octachlorodibenzofuran			3.8 E-2	1.3 E+2		
	Chlorinated paraffins	G	A	2.5 E-5	8.9 E-2		
4-Chloro- <i>o</i> -phenylenediamine D A 4.6 E-6 1.6 E-2	Chloroform	G	\mathbf{A}	5.3 E-6	1.9 E-2		
	4-Chloro-o-phenylenediamine	D	A	4.6 E-6	1.6 E-2		

[100 PCM fibers/m³]-¹; see Appendix D can be calculated using PEF factors contained in the benzo[a]pyrene TAC document

Α see Appendix A

BaP see benzo[a]pyrene TAC document; calculated from unit risk/cancer potency factors for BaP using PEF factors
 D Listed by ARB as "Particulate Matter from Diesel-Fueled Engines"; Scientific Review Panel unit risk "reasonable estimate" = 3.0 E-4 (μg/m³)⁻¹. Range of unit risks in TAC document was 1.3 E-4 – 2.4 E-3 (μg/m³)⁻¹.
 P See chemical summary for risk categorization

Exposure Routes

D = diet; DW = drinking water; G = gavage; I = inhalation; O = other oral route

Study Type

A = animal; H = human

Document Source

bold type = TAC document

Animal Unit Risk, Slope Factors

Chemical		Exposure Route	Study Type	Unit Risk (µg/m³)-1	Slope Factor (mg/kg-day) ⁻¹	Animal Unit Risk (µg/m³) ⁻¹	Animal Slope Factor (mg/kg-day) ⁻¹
p-Chloro-o-toluidine		D	A	7.7 E-5	2.7 E-1	· ·	
Chromium (hexavalent)	(inhalation)	I	H	1.5 E-1	5.1 E+2	NA	
n n	(oral)	DW	A		4.2 E-1		
Chrysene ^{BaP}	(inhalation)			1.1 E-5	3.9 E-2		
	(oral)				1.2 E-1		
Creosote		I	A	*	*		
<i>p</i> -Cresidine		D	A	4.3 E-5	1.5 E-1		
Cupferron		D	A	6.3 E-5	2.2 E-1		
2,4-Diaminoanisole		D	A	6.6 E-6	2.3 E-2		
2,4-Diaminotoluene		D	A	1.1 E-3	4.0 E+0		
Dibenz[a,h]acridine ^{BaP}	(inhalation)			1.1 E-4	3.9 E-1		
	(oral)				1.2 E+0		
Dibenz[a,j]acridine ^{BaP}				1.1 E-4	3.9 E-1		
					1.2 E+0		
Dibenz[a,h]anthracene ^{BaP}				1.2 E-3	4.1 E+0		
Dibenzo[a,e]pyrene ^{BaP}	(inhalation)			1.1 E-3	3.9 E+0		
	(oral)				1.2 E+1		
Dibenzo[a,h]pyrene ^{BaP}	(inhalation)			1.1 E-2	3.9 E+1		
	(oral)				1.2 E+2		
Dibenzo[a,i]pyrene ^{BaP}	(inhalation)			1.1 E-2	3.9 E+1		
	(oral)				1.2 E+2		
Dibenzo[a,l]pyrene ^{BaP}	(inhalation)			1.1 E-2	3.9 E+1		
	(oral)				1.2 E+2		
7H-Dibenzo[c,g]carbazole $^{\text{BaP}}$	(inhalation)			1.1 E-3	3.9 E+0		
	(oral)				1.2 E+1		
1,2-Dibromo-3-chloropropane		D	A	2.0 E-3	7.0 E+0		

BaP see benzo[a]pyrene TAC document; calculated from unit risk/cancer potency factors for BaP using PEF factors

Exposure Routes

D = diet; DW = drinking water; G = gavage; I = inhalation; O = other oral route

Study Type

A = animal; H = human

Document Source

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Animal Unit Risk, Slope Factors

 $^{[100 \} PCM \ fibers/m^3]^{-1}$; see Appendix D

can be calculated using PEF factors contained in the benzo[a]pyrene TAC document

Α see Appendix A

Listed by ARB as "Particulate Matter from Diesel-Fueled Engines"; Scientific Review Panel unit risk "reasonable estimate" = $3.0 \text{ E-4} \ (\mu\text{g/m}^3)^{-1}$. Range of unit risks in TAC document was $1.3 \text{ E-4} - 2.4 \text{ E-3} \ (\mu\text{g/m}^3)^{-1}$. See chemical summary for risk categorization

Chemical		Exposure Route	Study Type	Unit Risk	Slope Factor	Animal Unit	Animal Slope
		Route	Турс	$(\mu g/m^3)^{-1}$	(mg/kg-day) ⁻¹	Risk	Factor
				(1-8//	(8,8,),	$(\mu g/m^3)^{-1}$	(mg/kg-day) ⁻¹
1,4-Dichlorobenzene		G	A	1.1 E-5	4.0 E-2		
3,3'-Dichlorobenzidine		D	A	3.4 E-4	1.2 E+0		
1,1-Dichloroethane		G	A	1.6 E-6	5.7 E-3		
Diesel exhaust		I	Н	3.0 E-4^{D}	1.1 E+0		
Diethylhexylphthalate		D	A	2.4 E-6	8.4 E-3		
<i>p</i> -Dimethylaminoazobenzene		D	A	1.3 E-3	4.6 E+0		
7,12-Dimethylbenz[a]anthracene ^{BaP}	(inhalation)			7.1 E-2	2.5 E+2		
1,6-Dinitropyrene ^{BaP}	(inhalation)			1.1 E-2	3.9 E+1		
, 10	(oral)				1.2 E+2		
1,8-Dinitropyrene ^{BaP}	(inhalation)			1.1 E-3	3.9 E+0		
	(oral)				1.2 E+1		
2,4-Dinitrotoluene		D	A	8.9 E-5	3.1 E-1		
1,4-Dioxane		DW	A	7.7 E-6	2.7 E-2		
Epichlorohydrin		DW	A	2.3 E-5	8.0 E-2		
Ethylbenzene		I	A	2.5 E-6	8.7 E-3		
Ethylene dibromide		\mathbf{G}	A	7.1 E-5	2.5 E-1		
Ethylene dichloride		\mathbf{G}	A	2.1 E-5	7.2 E-2		
Ethylene oxide		I	A	8.8 E-5	3.1 E-1		
Ethylene thiourea		D	A	1.3 E-5	4.5 E-2		
Formaldehyde		I	A	6.0 E-6	2.1 E-2		
Hexachlorobenzene		D	A	5.1 E-4	1.8 E+0		
Hexachlorocyclohexanes (technical	grade)	D	A	1.1 E-3	4.0 E+0		
Hydrazine	(inhalation)	I	A	4.9 E-3	1.7 E+1		
	(oral)	G	A		3.0 E+0		
Indeno[1,2,3-cd]pyrene ^{BaP}	(inhalation)			1.1 E-4	3.9 E-1		
	(oral)				1.2 E+0		
Lead and lead compounds	(inhalation)	D	A	1.2 E-5	4.2 E-2		
	(oral)	D	A		8.5 E-3		
Lindane		D	A	3.1 E-4	1.1 E+0		
Methyl tert-butyl ether (MTBE)		G/I	A	2.6 E-7	1.8 E-3		
3-Methylcholanthrene ^{BaP}				6.3 E-3	2.2 E+1		

BaP see benzo[a]pyrene TAC document; calculated from unit risk/cancer potency factors for BaP using PEF factors

Exposure Routes

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A = animal; H = human

Document Source

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Animal Unit Risk, Slope Factors

 $^{[100 \} PCM \ fibers/m^3]^{-1}$; see Appendix D

can be calculated using PEF factors contained in the benzo[a]pyrene TAC document

Α see Appendix A

Listed by ARB as "Particulate Matter from Diesel-Fueled Engines"; Scientific Review Panel unit risk "reasonable estimate" = $3.0 \text{ E-4} \ (\mu\text{g/m}^3)^{-1}$. Range of unit risks in TAC document was $1.3 \text{ E-4} - 2.4 \text{ E-3} \ (\mu\text{g/m}^3)^{-1}$. See chemical summary for risk categorization

Chemical		Exposure Route	Study Type	Unit Risk (µg/m³)-1	Slope Factor (mg/kg-day) ⁻¹	Animal Unit Risk	Animal Slope Factor
						$(\mu g/m^3)^{-1}$	(mg/kg-day) ⁻¹
5-Methylchrysene ^{BaP}	(inhalation)			1.1 E-3	3.9 E+0		
, ,	(oral)				1.2 E+1		
4, 4'-Methylene bis(2-chloroanilin	e) (MOCA)	O	A	4.3 E-4	1.5 E+0		
Methylene chloride		I	A	1.0 E-6	3.5 E-3		
4,4'-Methylenedianiline		DW	A	4.6 E-4	1.6 E+0		
Michler's ketone		D	A	2.5 E-4	8.6 E-1		
Naphthalene		I	A	3.4 E-5	1.2 E-1		
Nickel compounds		I	H	2.6 E-4	9.1 E-1	3.8 E-3 (C)	
5-Nitroacenaphthene ^{BaP}				3.7 E-5	1.3 E-1		
6-Nitrochrysene ^{BaP}	(inhalation)			1.1 E-2	3.9 E+1		
-	(oral)				1.2 E+2		
2-Nitrofluorene ^{BaP}	(inhalation)			1.1 E-5	3.9 E-2		
	(oral)				1.3 E-1		
1-Nitropyrene ^{BaP}	(inhalation)			1.1 E-4	3.9 E-1		
	(oral)				1.2 E+0		
4-Nitropyrene ^{BaP}	(inhalation)			1.1 E-4	3.9 E-1		
	(oral)				1.2 E+0		
N-Nitrosodi-n-butylamine		DW	A	1.1 E-1	3.1 E-3		
N-Nitroso-N-methylethylamine		DW	A	6.3 E-3	2.2 E+1		
N-Nitrosodi-n-propylamine		G	A	2.0 E-3	7.0 E+0		
N-Nitrosodiethylamine		DW	A	1.0 E-2	3.6 E+1		
N-Nitrosodimethylamine		DW	A	4.6 E-3	1.6 E+1		
N-Nitrosodiphenylamine		D, G	A	2.6 E-6	9.0 E-3		
p-Nitrosodiphenylamine		D	A	6.3 E-6	2.2 E-2		
N-Nitrosomorpholine		DW	A	1.9 E-3	6.7 E+0		
N-Nitrosopiperidine		DW	A	2.7 E-3	9.4 E+0		
N-Nitrosopyrrolidine		DW	A	6.0 E-4	2.1 E+0		
Pentachlorophenol		D	A	5.1 E-6	1.8 E-2		
Perchloroethylene	(inhalation)	\mathbf{G}	\mathbf{A}	5.9 E-6	2.1 E-2		
	(oral)	G	A		5.1 E-2		

 $[100 \ PCM \ fibers/m^3]^{-1}$; see Appendix D

Α see Appendix A

BaP see benzo[a]pyrene TAC document; calculated from unit risk/cancer potency factors for BaP using PEF factors

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Exposure Routes

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Study Type

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Document Source

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Animal Unit Risk, Slope Factors

can be calculated using PEF factors contained in the benzo[a]pyrene TAC document

Chemical		Exposure	Study	Unit	Slope	Animal	Animal
		Route	Type	Risk	Factor	Unit	Slope
				$(\mu g/m^3)^{-1}$	(mg/kg-day) ⁻¹	Risk	Factor
						$(\mu g/m^3)^{-1}$	(mg/kg-day) ⁻¹
Polychlorinated biphenyls (PCBs)	(high risk) ^P	D	A	5.7 E-4	2.0 E+0		
	(low risk) ^P	D	A	1.1 E-4	4.0E-1		
	(lowest risk) ^P	D	A	2.0 E-5	7.0 E-2		
Potassium bromate		DW	A	1.4 E-4	4.9 E-1		
1,1,2,2-Tetrachloroethane		G	A	5.8 E-5	2.0 E-1		
Thioacetamide		D	A	1.7 E-3	6.1 E+0		
2,4-Toluene diisocyanate		G	A	1.1 E-5	3.9 E-2		
2,6-Toluene diisocyanate		G	A	1.1 E-5	3.9 E-2		
1,1,2-Trichloroethane (vinyl trichlo	oride)	G	A	1.6 E-5	5.7 E-2		
Trichloroethylene	(inhalation)	I	\mathbf{A}	2.0 E-6	7.0 E-3		
	(oral)	G	A		1.5 E-2		
2,4,6-Trichlorophenol		D, G	A	2.0 E-5	7.0 E-2		
Urethane		D, DW,	A	2.9 E-4	1.0 E+0		
		G					
Vinyl chloride		I	A	7.8 E-5	2.7 E-1		

 $[100 \ PCM \ fibers/m^3]^{-1}$; see Appendix D

can be calculated using PEF factors contained in the benzo[a]pyrene TAC document

Α see Appendix A

BaP see benzo[a]pyrene TAC document; calculated from unit risk/cancer potency factors for BaP using PEF factors
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 P See chemical summary for risk categorization

Exposure Routes

D = diet; DW = drinking water; G = gavage; I = inhalation; O = other oral route

Study Type

A = animal; H = human

Document Source

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Animal Unit Risk, Slope Factors